

ABSTRACT OF THE DISCLOSURE

The combination of contrast enhanced magnetic resonance imaging (MRI) and MR-guided subcutaneous core biopsy can be used as a robust approach for the diagnosis and treatment of breast cancer. MRI provides the means to accurately position and monitor interventional procedures such as biopsy, removal of tissue or other transcanular procedures. MRI may also be used in this invention to position and monitor the progress of breast conserving therapies (BCT), such as laser photo-ablation, cryoablation and localized hyperthermia. The general practice of this invention is to provide a remotely controlled apparatus for MR-guided interventional procedures in the breast. The apparatus allows the practice of a method that provides flexibility in conditioning the breast, i.e. orientation and degree of compression, and in setting the trajectory of the intervention. To that end, a robust conditioning/positioning device, fitted with the appropriate degrees of freedom, enhances the efficacy and efficiency of breast interventions by providing the flexibility in planning and executing an appropriate procedure strategy that better suits interventional procedures, either those in current use or yet to be developed. The novelty and potential commercial success of the device originates from its high maneuverability to set and perform the procedure strategy and its adaptability to accommodate an array of interventional probes. Remote control of this device can allow planning the operation and performing the relevant tasks in a short period, for example, within the contrast window provided by a single injection of a contrast agent, and this feature can be operator-independent.

10028050-122001